

REMARKS

Applicant has reviewed the Office Action mailed on November 21, 2006 as well as the art cited. Claims 1-20 are pending in this application.

Amendments to the Specification

The disclosure was objected to by the Examiner in that the word “fluorescent” was misspelled in three instances. These misspellings have been corrected, along with some other minor typographical errors.

Rejections Under 35 U.S.C. § 102

Claims 1-20 were rejected under 35 USC § 102(e) as being anticipated by Zou et al., (U.S. Patent No. 6,186,649). Applicant respectfully traverses the rejection.

Claim 1 reads as follows:

An illumination system for illuminating a scan region on an object, comprising:

a hollow reflector having an interior reflective surface and an exit aperture;

a light source positioned within said hollow reflector, said light source producing a plurality of light rays, some of the light rays produced by said light source being reflected by the interior reflective surface of said hollow reflector before passing through the exit aperture;

a first reflector positioned within and adjacent a first side of the exit aperture of said hollow reflector; and

a second reflector positioned within and adjacent a second side of the exit aperture of said hollow reflector, said first and second reflectors being positioned in non-parallel, spaced-apart relation to one another, said first and second reflectors at least partially collimating light passing through the exit aperture of said hollow reflector to form a collimated beam.

Claim 1 has been amended to clarify the language regarding the location of the first and second reflectors. Specifically, claim 1 has been amended to specify that the first and second reflectors are located adjacent the side of the exit aperture within the exit aperture, e.g., exit aperture 28 of hollow reflector 24 shown in Figure 2 of the present application. The Examiner points to surfaces 420 and 422 of Figure 12 in Zou et al. as meeting this limitation. Applicant

respectfully traverses this assertion. These surfaces are not located within the exit aperture. Rather, they are part of another device that is positioned relative to the exit aperture. Applicant respectfully asserts that there is nothing in Zou et al. that teaches or suggests placing surfaces 420 and 422 in the exit aperture. Therefore, withdrawal of the rejection is respectfully requested.

Claims 2 to 9 depend directly or indirectly from claim 1 and are allowable at least for the reasons identified above with respect to claim 1.

Claim 10 reads as follows:

An illumination system for illuminating a scan region on an object, comprising:

- a body having an interior wall defining a generally cylindrically shaped interior reflective surface, the interior wall of said body also defining a generally elongate axial opening therein located at a first radial position on the interior wall of said body;

- a light source positioned within the generally cylindrically shaped interior reflective surface defined by said body;

- a first reflector positioned within and adjacent a first side of the elongate axial opening defined by the interior wall of said body; and

- a second reflector positioned within and adjacent a second side of the elongate axial opening defined by the interior wall of said body, said first and second reflectors being positioned in non-parallel, spaced-apart relation to one another, said first and second reflectors at least partially collimating light passing through the exit aperture of said hollow reflector to form a collimated beam.

Claim 10 has been amended to clarify the language regarding the location of the first and second reflectors. Specifically, claim 10 has been amended to specify that the first and second reflectors are located adjacent the side of the exit aperture within the exit aperture, e.g., exit aperture 28 of hollow reflector 24 shown in Figure 2 of the present application. The Examiner points to surfaces 420 and 422 of Figure 12 in Zou et al. as meeting this limitation. Applicant respectfully traverses this assertion. These surfaces are not located within the exit aperture. Rather, they are part of another device that is positioned relative to the exit aperture. Applicant respectfully asserts that there is nothing in Zou et al. that teaches or suggests placing surfaces 420 and 422 in the exit aperture. Therefore, withdrawal of the rejection is respectfully requested.

Claims 11-17 depend directly or indirectly from claim 10 and are allowable at least for the reasons identified with respect to claim 10.

Claim 18 reads as follows:

An illumination system for illuminating a scan region on an object, comprising:

hollow reflector means for defining an interior reflecting surface and an exit aperture;

light source means positioned within said hollow reflector means for producing a plurality of light rays; and

collimating reflector means positioned within the exit aperture defined by said hollow reflector means for at least partially collimating light exiting the exit aperture defined by said hollow reflector means to form a collimated beam.

Claim 18 has been amended to clarify the language regarding to location of the collimating reflector means. Specifically, claim 18 has been amended to specify that the collimating reflector means is positioned within the exit aperture, e.g., exit aperture 28 of hollow reflector 24 shown in Figure 2 of the present application. The Examiner points to optical element 416 with collimating surfaces 420 and 422 of Figure 12 in Zou et al. as meeting this limitation. Applicant respectfully traverses this assertion. Optical element 416 and these surfaces are not located within the exit aperture. Rather, the optical element is positioned outside the exit aperture. Applicant respectfully asserts that there is nothing in Zou et al. that teaches or suggests placing optical element 416 and its collimating surfaces 420 and 422 in the exit aperture. Therefore, withdrawal of the rejection is respectfully requested.

Claim 19 depends from claim 18 and is allowable at least for the reasons identified above with respect to claim 18.

Claim 20 reads as follows:

A method for illuminating a scan region on an object, comprising:

providing a hollow reflector having an interior reflecting surface and an exit aperture;

providing a collimating reflector within the exit aperture of the hollow reflector; and

directing a plurality of light rays onto the interior reflecting surface of the hollow reflector, the interior reflecting surface reflecting some of the light rays through the exit aperture in the hollow reflector, the collimating reflector at least partially collimating light exiting the exit aperture in the hollow reflector to form a collimated beam.

Claim 20 has been amended to clarify the language regarding to location of the collimating reflector. Specifically, claim 20 has been amended to specify that the collimating reflector is positioned within the exit aperture, e.g., exit aperture 28 of hollow reflector 24 shown in Figure 2 of the present application. The Examiner points to optical element 416 with collimating surfaces 420 and 422 of Figure 12 in Zou et al. as meeting this limitation. Applicant respectfully traverses this assertion. Optical element 416 and these surfaces are not located within the exit aperture. Rather, the optical element is positioned outside the exit aperture. Applicant respectfully asserts that there is nothing in Zou et al. that teaches or suggests placing optical element 416 and its collimating surfaces 420 and 422 in the exit aperture. Therefore, withdrawal of the rejection is respectfully requested.

CONCLUSION

Applicant respectfully submits that claims **1-20** are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 08-2025.

If the Examiner has any questions or concerns regarding this response, please contact the undersigned at 612-455-1680.

Respectfully submitted,

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Date: February 21, 2007

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